5th Grade
WASL Item Specifications

Number Sense

GLE 1.1.1, 1.1.2, 1.1.3 understand relative value of mixed numbers, proper and improper fractions and decimals; understand divisibility including prime and composite numbers, factors and multiples, understand and use the associative property of addition and the commutative, associative, identity and zero properties of multiplication

Vocabulary and Terms

=, ≠, <, >, decimal, denominator (could be 2, 3, 4, 5, 6, 8, 10, 12 or 15), digit, equal, equivalent, even, factor, fraction, greater than, greatest, greatest common factor, hundreds, hundredths, in order, least, least common multiple, less than, mixed numbers, number, number line, numerator, odd, ones, place value (up to one million), prime, tens, tenths, thousands, thousandths, value, whole number

Item Characteristics

	Identify or illustrate mixed numbers or improper fractions
	Identify and/or illustrate fractional or decimal parts
	Explain how the value of a fractional part changes in relationship to the size of the whole
	Read or write decimals, explain the value of a given decimal to the thousandths place
	Convert between improper fractions, mixed numbers and decimals to compare values
	Identify or determine the order of fractions or decimals on # lines or w/ pictures and explain why one is greater, less or equal to another
	Identify the values of points on an incomplete number line involving fractional or decimal increments
	Identify equivalent fractions and decimals and/or explain the relationship
	Determine whether one number is a multiple of another or identify the least common multiple of 2 numbers
	Identify or list factors or factor pairs, or determine the greatest common factor of 2 numbers
	Illustrate prime or composite numbers by creating a physical model
	Identify or determine composite or prime numbers between 1 – 100, explain why
	Identify the use of or illustrate the multiplication properties (see vocab for list)
	Identify the use of or illustrate the associative property for addition

Ratio and proportion are not measured at grade 5

GLE 1.1.5 addition and subtraction of decimals and fractions

Vocabulary and Terms:

Addition, common denominator, decimal, difference, equation, subtraction, sum,

Fractions may include denominators of 2, 4, 8, or 2, 3, 6, or 2, 5, 10. Decimals may include tenths, 0.25, and/or 0.75

	Explain the relationship between + and – of decimals or fractions
	Identify an illustration of + and – of decimals or fractions
	Explain or illustrate + and – of decimals or fractions with symbolic or picture representation
	Select or use appropriate operations to show understanding of + and – of decimals & fractions
	Translate a given picture into an equivalent symbolic representation of + and – of decimals and fractions

GLE 1.1.6 multiply and divide whole numbers, add, subtract decimals and like denominator fractions

Vocabulary and Terms:

Addition, difference, division, equation, factor, multiple, multiplication, operation, product, remainder, subtraction, sum

Item Characteristics (session without tools)

	Multiply – a 1 or 2 digit multiplier and a 2 digit multiplicand
	Divide – a 2 digit dividend by a 1 or 2 digit divisor
	Interpret and apply the concept of a remainder in a given context
	Add – 3 non negative like denominator fractions 2 numbers with decimals to the thousandths, or 3 to the hundredths
	Subtract – like denominators through 12, numbers with decimals to the thousandths place
	Do multi-step calculations using +, - x and ÷ of whole numbers

GLE 1.1.8 use estimation to determine reasonableness, identify when an approximation is appropriate

Vocabulary and Terms:

"about how many" "close to", estimate, number line, round, "to the nearest" (terms used with a definition – quotient)

	Identify or explain whether estimation or exact measure is appropriate in situations involving x or ÷ of whole numbers or + and – of decimals and like denominator fractions
	Estimate computation results
	Use estimation to determine whether computation answer is reasonable
	Explain a strategy use for estimation

**** Students may not receive credit in estimation items for computing first and then rounding****

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Measurement

GLE 1.2.1 understand the concepts of angle measurement and area.
Students are expected to know how to determine area of a polygon, area of a rectangle

Vocabulary and Terms:
Cm, in, or other common abbreviations, angle, area, attribute, centimeter, degree, foot/feet, inch, kilometer (km), length, meter(m), mile (mi), millimeter (mm), perimeter, square unit, width, yard (yd)

	Identify or describe pictures that illustrate area measurements
	Identify or draw representations of figures to illustrate the understanding of the difference between area and perimeter
	Sort angles into those greater than or less than 90^o
	Identify and compare angles in pictures, diagrams or illustrations
	Describe or compare pictures or objects in terms of angle measurements
	Use area and/or perimeter to compare two or more rectangles

students are expected to determine and label units

GLE 1.2.2, 1.2.3 understand the difference between length units and area (square) units using the US or metric system, understand the concept of angles (30^o, 45^o, 60^o, 90^o and 180^o), understand how time units are organized, how weight units are organized in the US system and how capacity, weight/mass, and length units are organized in the metric system

Vocabulary and Terms
$, acute angle, angle, area, attribute, centimeter (cm), day, degree (^{o}), foot/feet (ft), gram (g), hour (hr), inch (in), kilogram (kg), kilometer (km), length, liter (L) mass, mile (mi), milliliter (mL), millimeter (mm), minute (min), month (mo), obtuse angle, ounce (oz), perimeter, pound (lb), right angle, second (s), square unit, ton, unit, week (wk), yard (yd), year (yr)

	Draw, describe, compare perimeter and area to show understanding that perimeter is linear units and area is square units
	Explain or show how the size of a linear unit affects a square unit
	Sort and classify angles as 30^o,45^o, 60^o, 90^o, and/or 180^o
	Draw angles with measurements that are approximately 30^o,45^o, 60^o, 90^o, and/or 180^o
	Explain or show the relationship of weight units in the US system
	Show the relationship between units in the metric system for capacity, weight or length
	Convert between time units, weight units in the US system or between capacity, weight/mass, or length units in the metric system
	Explain or show the relationship of time units in a given situation

Conversions:
Length: 1 foot = 12 inches, 1 yard = 3 feet, 1 meter = 1,000 millimeters, 1 meter = 100 centimeters, 1 kilometer = 1,000 meters
Weight/mass: 1 pound = 16 ounces, 1 kilogram = 1,000 grams
Time: 1 minute = 60 seconds, 1 hour = 60 minutes, 24 hours = 1 day, 1 week = 7 days, 1 year = 52 weeks, 1 year = 12 months, 1 year = 365 (365.25) days
Capacity 1 liter = 1,000 milliliters

GLE 1.2.4, 1.2.5 use systematic procedures to measure and describe the area of rectangles, select and use tools that match the unit selected, count the number of units, use formulas to find the perimeter and area of rectangles and right triangles

Vocabulary and Terms:
(abbreviations shown previously), angle, area, attribute, centimeter, foot/feet, inch, kilometer, length, meter, mile, millimeter, perimeter, square unit, unit, yard

	Identify the appropriate attribute to measure in a given situation
	Identify, select and describe the units or tools for measuring length, perimeter, and/or area in a given situation
	Determine whether the appropriate tool has been selected
	Count or compare the attribute to the units on the measurement tool to determine the number of units for length, perimeter and/or area
	Determine whether the measurement has been done correctly
	Determine the perimeter or area of a rectangle
	Determine the length of sides of a rectangle based on a given area
	Explain a method for measuring the area of a right triangle

GLE 1.2.6 identify situations in which estimation measurements are sufficient, estimate measurements of angles and areas of rectangles and right triangles, estimate areas of irregular figures using manipulatives or pictures

Vocabulary and Terms:
All of the previous words and degree and estimate

	Determine whether estimation is appropriate in a given situation
	Use estimation to determine if a given measurement is reasonable for the situation
	Identify or explain how to estimate the measurement of an angle
	Identify or explain how to estimate the area of a rectangle or right triangle
	Estimate measures of angles or draw angles that are approximately 30^{o},45^{o}, 60^{o}, 90^{o}, and/or 180^{o}
	Estimate perimeter and/or area of a rectangle or right triangle
	Estimate the area of an irregular figure using grids

****Students may not receive credit in estimation by computing and then round. They are expected to determine and label units.****

Geometric Sense

GLE 1.3.1, 1.3.2 understand characteristics of angles and polygons and the concepts of parallel and perpendicular lines and line of symmetry, use properties of congruence, parallel and perpendicular lines and line of symmetry to describe, draw, compare 2D shapes and figures

Vocabulary and Terms:
Angle, attribute, congruent, figure, hexagon, line, line segment, octagon, parallel, pentagon, perpendicular, polygon, rectangle, rhombus, right angle, side, sort, square, symmetry, triangle

	Identify and/or describe a 2D shape using properties including number of sides, number of vertices, types of angles, parallel lines, perpendicular lines and/or lines of symmetry
	Compare and sort 2D shapes according to their properties including number of sides, number of vertices, types of angles, parallel lines, perpendicular lines and/or lines of symmetry
	Draw a simple 2D figure or shape having certain characteristics
	Identify parallel and perpendicular lines or lines of symmetry
	Draw and label angles, quadrilaterals, congruent, and symmetric 2D shapes
	Identify or draw one or more lines of symmetry in a given figure
	Complete a picture or design given the line of symmetry
	Draw and label a design that includes a given set of properties or characteristics

GLE 1.3.3, 1.3.4 locate or place points on a coordinate grid in the first quadrant, locate or place whole numbers, fractions, and decimals on a positive number line =, recognize or draw a translation (slide), or reflection of a 2D shape or figure

Vocabulary and Terms:
Congruent, graph paper, graph, grid, hexagon, image, intersect, line, line segment, location, number line, octagon, ordered pair, pentagon, point, polygon, rectangle, rhombus, square, triangle, x-axis, y-axis
Translation will be used with the word slide, reflection with flip

	Use coordinates to identify or name the location of whole numbers, fractions and decimals on a positive number line
	Place points with positive coordinates on a number line
	Use ordered pairs to identify or name the location of points in the first quadrant of the Cartesian plane
	Place points, with given ordered pairs, on a coordinate grid, 1^{st} quadrant
	Identify or describe whether a figure has been transform by a translation or a reflection
	Identify a picture of a particular translation or reflection with or without a grid
	Draw a particular translation or reflection on a grid

Probability and Statistics

GLE 1.4.1, 1.4.2

Vocabulary and Terms:
Chances of, equally likely, experiment, fair, impossible, least likely, less likely, likely, more likely, most likely, possible, predict, prediction, probability, probably, unlikely

	Decide whether an event is certain, possible or impossible
	Determine whether an event is more likely, equally likely, or less likely
	Explain why some outcomes are equally likely or more or less likely to happen than others
	Determine whether a real life event has zero probability, 50% or 100% probability of occurring
	List and/or count possible outcomes of simple experiments or activities
	Explain why a game is fair or unfair
	Create a simple spinner, game, or situation that would produce a fair outcome or would make it more likely for one outcome to happen than another

GLE 1.4.3, 1.4.4 identify and/or describe appropriate questions and samples to obtain the desired kind of information, describe how different collection methods or different questions affect the data collected, understand the concept of, determine, compare and use median, and mode to describe a set of data, understand the concept of and determine mean using objects and pictures

Vocabulary and Terms:
Data, sample, survey, (mean will say average, median – middle number and mode – most common or most common number)

	Identify or write questions needed in order to obtain certain data
	Identify or describe appropriate populations to obtain needed information
	Identify or describe how different samples or questions could affect the data collected
	Determine the mean using objects and pictures
	Determine and/or use the median and/or mode of a set of data
	Compare the mean, median and/or mode using words or pictures
	Explain the significance of mean in describing a set of data
	Demonstrate pictorially an understanding of mean
	Explain whether the mean, median or mode is the most appropriate measure to describe a given set of data

GLE 1.4.5 read data from text, line plots, pictographs, circle graphs and determine when using each of these is appropriate; read and use data from tables, charts and bar graphs

Vocabulary and Terms:
Axis, circle graph, graph, graph paper, grid, line plot, pattern, pictograph, scale, x-axis, y-axis

	Read data from line plots, pictographs, and circle graphs
	Describe the completeness and accuracy of the data in a line plot, pictograph, or circle graph
	Identify and explain whether a line plot, pictograph or circle graph is more appropriate for a given set of data, particular situation or purpose or answers a question most effectively
	Identify or describe trends or patterns tin data
	Read and summarize data presented in text, line plot, pictograph or circle graph

Algebraic Sense

GLE 1.5.1, 1.5.2 extend or create patterns of shapes, objects or patterns of number that use only one arithmetic operation (+, -, x, and ÷) to move from one term to the next, describe a rule for a pattern with a single operation, identify a rule for a pattern with combinations of 2 arithmetic operations in the rule

Vocabulary and Terms:
Number pattern, pattern, predict, rule

	Identify, describe or create a pattern of numbers, shapes or objects with a single operation between terms
	Extend a pattern by supplying missing elements in the beginning, middle and/or end or extend a pattern and describe the pattern or write a rule
	Identify, describe, or write a rule for a pattern based on a single operation in the rule
	Identify a rule for a pattern with combinations of two operations in the rule
	Explain why a given rule with a single operation fits the pattern
	Create a pattern based on a given rule with a single operation

GLE 1.5.3, 1.5.4 understand inequality and express relationships between quantities using =, ≠, < or > in equations and inequalities, use variables to write expressions and equations that represent situations involving multiplication or division or addition and subtraction of like-denominator fractions

Vocabulary and Terms:
=, ≠, < , >, equation, expression, pattern

	Identify or write an expression using a variable to represent a given situation
	Identify or write a simple equation with a variable to represent a given situation
	Identify or write a simple inequality with a variable using ≠, < , or >
	Explain the meaning of a variable in a formula, expression, equation or inequality
	Identify or describe a situation that corresponds to a given expression or equation
	Identify or write an expression or equation without a variable that corresponds to a given situation
	Identify or describe a situation that corresponds to a given inequality
	Express relationships between quantities using ≠, < , or >

GLE 1.5.5, 1.5.6 evaluate simple expressions with addition, subtraction, multiplication or division using manipulatives, pictures, and/or symbols, solve simple equations with multiplication or division using manipulatives, pictures and/or symbols

Vocabulary and Terms:
=, equal, equation, expression, solve

	Write an expression for a given situation and find the value of the expression given the values for the variables
	Find the value of a simple expression or formula involving +, -, x, or ÷ given the value for the variables
	Solve a simple equation involving x, or ÷ in a given situation
	Write and solve an equation in a given situation
	Explain or show the meaning of a solution to an equation

Process strands

Process strand 6 Solves Problems and Reasons Logically

Vocabulary is all the terms found in the 5 content strands and conclude, conclusion not important, not needed, problem, solution, solve, strategy, support

GLE 2.1.1, 2.1.2, 2.1.3 (Define the Problem) identify questions to be answered in familiar situations, recognize when information is missing or not necessary, identify what is known and unknown in familiar situations

- Identify what information is relevant, missing or not necessary to solve a given problem
- Clarify the purpose of the problem or identify the question the situation presents
- Formulate or identify additional questions that need to be answered in order to find a solution
- Identify the known and unknown information in a given problem situation

GLE 2.2.1, 2.2.2, 2.2.3, 2.2.4 (Construct solution) select and organize relevant information, use appropriate concepts and procedures from number, measurement, geometry and statistics, use a variety of strategies and approaches, determine whether a solution is viable, correct and answers the question asked

- Solve a problem by selecting and organizing information, using strategies to construct a solution and answer the question correctly
- Determine whether a given solution shows the use and organization of relevant information
- Determine whether a given solution shows the use of strategies and approaches that are appropriate
- Determine whether a given answer is reasonable, correct and answers the question asked

GLE 3.1.1 (Analyze Information) interpret and compare numerical, geometric or statistical information in familiar situations

- Interpret mathematical information or results
- Identify a valid interpretation of information or results
- Compare math information in text, graphs, tables, diagrams, and pictures
- Compare information in order to answer a question
- Identify the agreement or differences between diagrams and/or picture representations
- Compare patterns or trends shown by data or other information

GLE 3.2.1, 3.2.2, 3.2.3 (Conclude) Draw conclusions and support them; evaluate procedures and results in familiar situations

- Draw a conclusion and support with data or facts based on the situation
- Show examples or data to support or contradict a given conclusion
- Evaluate procedures and/or resents based on a given partial or complete solution
- Identify a valid conclusion based on given information

GLE 2.2.2, 2.2.3, 3.3.1, 3.3.2, 3.3.3. Construct Solutions and Verify Results use viable strategies, concepts and procedures from number, measurement, geometry, and statistics to construct a solution, justify results using evidence, check for reasonableness, validate thinking

- Apply various concepts, procedures and problem-solving strategies to solve a problem AND explain why the solution is appropriate or make comparisons using evidence
- Solve the problem AND then check for reasonableness of results

Process Strand 7 Communicates Understanding

GLE 4.1.1, 4.1.2 (Gather Information) develop and follow a simple plan for collecting numerical, measurement, geometric, and/or statistical information for a given purpose; extract information for a given purpose from one or two different sources using reading and observation

- Develop and describe a plan to gather math information including specified number of pieces of information and where or how to find them
- List or describe the general procedure/order of steps of a plan, not a survey, to gather exactly the information sought and no irrelevant information
- Extract and explain and describe math information from various sources such as pictures, symbols, text, tables, charts, bar graphs, line plots, pictographs, or circle graphs, diagrams, and models for a purpose
- Write questions that could be answered using data sources such as magazines, newspapers, menus, sale and travel brochures, TV and bus schedules or a sales receipt

GLE 4.2.1, 4.2.2,4.2.3 Represent and Share Information organize information for a given purpose, use everyday and mathematical language and/or notation to express ideas involving number sense, measurement, geometry, and/or statistics; explain or represent math ideas and information
Terms audience, convince, present, represent

- Clearly organize math data in a useful format for a given purpose
- Represent math information using pictures, tables, charts, bar graphs, pictographs, line plots, circle graphs, drawings, or other forms and include titles, labels, appropriate and consistent scales, and accurate data display for a given purpose or audience
- Clearly explain or describe math ideas, facts, properties, procedures or strategies for a given purpose or audience using math language and notation

Process Strand 8 Makes Connections

GLE 5.1.1, 5.1.2 (Connect with Mathematics) use concepts and procedures from two of the content strands in a given situation; recognize equivalent math models and representations in familiar situations

- Use concepts from two different strands
- Identify which of three math models or representations is equivalent to another
- Create a model or representation that is equivalent to a given model, including graphs, numbers, pictures, geometry or other forms.
-